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Fighting with Siblings and with Peers among Urban High School Students

Renee M. Johnson, PhD, MPH[a,b], **Dustin T. Duncan, ScD**[b,c], **Emily F. Rothman, ScD**[a,b], **Tamika D. Gilreath, PhD**[d], **David Hemenway, PhD**[b], **Beth E. Molnar, ScD**[e], and **Deborah Azrael, PhD**[b]

[a] Department of Community Health Sciences, Boston University School of Public Health; Boston, MA

[b] Harvard School of Public Health; Boston, MA

[c] New York University School of Medicine; New York, NY

[d] University of Southern California, School of Social Work; Los Angeles, CA

[e] Bouvé College of Health Sciences, Northeastern University; Boston, MA

Abstract

Understanding the determinants of fighting is important for prevention efforts. Unfortunately, there is little research on how sibling fighting is related to peer fighting. Therefore, the aim of this study was to evaluate the association between sibling fighting and peer fighting. Data are from the Boston Youth Survey 2008, a school-based sample of youth in Boston, MA. To estimate the association between sibling fighting and peer fighting we ran four multivariate regression models and estimated adjusted prevalence ratios and 95% confidence intervals. We fit generalized estimating equation models to account for the fact that students were clustered within schools. Controlling for school clustering, race/ethnicity, sex, school failure, substance use, and caregiver aggression, youth who fought with siblings were 2.49 times more likely to have reported fighting with peers. To the extent that we can confirm that sibling violence is associated with aggressive behavior, we should incorporate it into violence prevention programming.

Keywords

physical fighting, youth violence; adolescents; risk behaviors; family violence

Introduction

One-third of 9th-12th graders in the U.S. report having been in a physical fight in the past year (Eaton et al., 2012). Reducing this prevalence is a public health priority for several reasons (Office of the Surgeon General [OSG], 2001). First, fighting may result in injuries requiring emergency department (ED) visits, which are costly (Borowsky & Ireland, 2004).

Corresponding Author: Renee M. Johnson, PhD, MPH Johns Hopkins Bloomberg School of Public Health Department of Mental Health 624 North Broadway, 8th Floor, Room 801 Baltimore MD 21205-1999 **TEL** (410) 955-7073 **FAX** (410) 955-9088 rejohnso@jhsph.edu.

In 2005, there were 229,000 ED visits for assaults among 13-18 year olds, and the medical costs for those visits exceeded $184 million (National Center for Injury Prevention and Control, 2012). Second, fighting is associated with health and behavioral problems, such as substance use, sexual risk behaviors, and suicidality (Kelley, Loeber, Keenan, & DeLamatre, 1997; Rudatsikira, Muula, & Siziya, 2008). Adolescents involved in fighting are more likely to report fair or poor health, versus good or excellent health (Bossarte, Swahn, & Breiding, 2009). Finally, because learning to handle conflict non-aggressively is a developmental task that needs to be accomplished for a successful transition to adulthood, physical fighting is an indicator of the level of positive youth development (Williams, Rivera, Neighbours, & Reznik, 2007). Young people who fail to accomplish this task may be more likely to engage in persistent fighting, violent crime, and other antisocial behavior in adulthood (Kelley et al., 1997; Moffitt, 1993).

Healthy People 2020 Objective IVP-34 aims to reduce the prevalence of fighting among youth by 10% (Office of Disease Prevention and Health Promotion, 2010). To achieve this objective, we first need accurate information about the determinants of fighting, and we must then use it to develop and refine violence prevention programs (OSG, 2001). This article responds to those needs by investigating sibling fighting, which is an important issue in its own right, and which may also be an important factor in in peer fighting (Ensor, Marks, Jacobs, & Hughes, 2010).

Sibling Violence

Children and adolescents fight with their siblings more frequently than with anyone else, including peers (Gelles, 1997; Kreiter et al., 1999), and the fighting has negative implications for mental health (Stocker, Burwell, & Briggs, 2002; Tucker, Finkelhor, Turner, & Shattuck, 2013). Straus, Gelles, & Steinmetz (2006) report that more than one-half of children are hit or attacked by a sibling each year. Similarly, a recently published national study suggests that 40% of 2-17 year olds experience aggression from siblings (Tucker et al., 2013). Sibling fighting is more likely than peer fighting to be chronic (i.e., occurring >4 times per year), but is less likely to be severe (i.e., it does not typically involve weapons or result in physical injury) (Finkelhor, Turner, & Ormrod, 2006).

From a developmental perspective, sibling aggression in childhood can be considered normative, as young children have low levels of self-regulation and impulse control (Tucker et al., 2013). Within the family context, children have an opportunity to learn how to manage conflicts in both prosocial and anti-social ways (Finkelhor et al., 2006; Kramer & Conger, 2009; Solomon, Bradshaw, Wright, & Cheng, 2008; Williams, Conger, & Blozis, 2007). With sufficient pro-social socialization and increases in maturity, children learn to handle conflict with siblings non-aggressively and the frequency of physical fighting decreases. Accordingly, a large longitudinal study showed that physical violence among siblings is inversely associated with child age (Finkelhor et al., 2006). Nearly half of 6-9 year olds engaged in physical violence with siblings, compared to less than 30% of the 14-17 year olds. Simply put, sibling violence becomes progressively more atypical with age. Mid-late adolescents who have not yet ceased being physically aggressive with siblings may be at heightened risk for engagement in other forms of physical aggression, such as fighting

with non-family peers. In this manner, physical fights with siblings could be a marker of risk for physical fighting with peers.

Sibling Violence & Peer Violence

Violence among siblings has been insufficiently explored as a risk factor for youth violence. It was not mentioned in the U.S. Surgeon General's report on youth violence (OSG, 2001), and it has also been overlooked in large-scale studies designed to outline risk factors for youth violence (Bernat, Oakes, Pettingell, & Resnick, 2012; Henry, Tolan, Gorman-Smith, & Schoeny, 2012). By comparison, caregiver aggression, substance use, and school failure are routinely cited as risk factors for fighting and violence (Herrenkohl et al., 2000; OSG, 2001).

The oversight of sibling violence as a risk factor for peer violence persists despite the fact that a few studies have shown an association between the two. For example, in a study of 12-15 year olds in Tel Aviv, Israel (n=921), the authors found that youth who were bullied by siblings were significantly more likely to be bullied at school (Wolke & Samara, 2004). In research with 375 seventh and eighth graders in a rural community in the Southern US, Duncan (1999) found that 60% of youth who reported that they were bullied by peers and that they bullied peers (i.e., “bully/victims”), said they had been bullied by a sibling. Additionally, Menesini, Camodeca, & Nocentini (2010) found an association between being bullied or victimized by siblings and being victimized by peers and classmates. Research examining the association between peer and sibling aggression has focused primarily on children and early adolescents (i.e., 10-13 years of age) (Aguilar, O'Brien, August, Aoun, & Hektner, 2001; Duncan, 1999; Ensor et al., 2010; Menesini, Camodeca, & Nocentini, 2010). Whether a similar association exists for mid-late adolescents is unclear.

The Current Study

The current article examines sibling fighting and peer fighting among high school students in Boston, MA. It explicitly responds to the fact that there has been little attention to the association between sibling violence and peer violence among mid-late adolescents, despite the high prevalence of sibling violence and despite theoretical support for an association. This study had three aims. First, we examined the prevalence and co-occurrence of fighting with siblings and with peers. Second, we compared the strength of the association between peer fighting and sibling fighting to the association between peer fighting and other well-established risk factors for youth violence. Third, we investigated the strength of the association between peer fighting and sibling fighting, controlling for demographic characteristics and well-established risk factors for youth violence.

Methods

Sample

Data are from the 2008 administration of the Harvard Youth Violence Prevention Center’s “Boston Youth Survey” (BYS). The BYS is a biennial paper-and-pencil survey of high school students (9^{th}-12^{th} graders) in Boston Public Schools (Azrael et al., 2009). Nearly three-quarters of the District's students are low-income, and 76% are Black and/or Hispanic

(Boston Public Schools, 2009). Although the BYS 2008 covered a range of topics (e.g., health behaviors, use of school and community resources, perceptions of neighborhoods, and developmental assets), the main emphasis was on violence and aggressive behavior.

All 32 eligible public schools within the Boston Public Schools system were invited to participate; 22 accepted. There were no statistically significant differences in school characteristics (e.g. racial/ethnic composition of students, proportion of students receiving free or reduced-price lunches, drop-out rates, or standardized test scores) between the participating and non-participating schools. Schools that were ineligible were those that exclusively served: adults (i.e., "night school"), students transitioning back to school after incarceration, suspended students, and students with severe and profound disabilities (e.g., emotional and behavioral disorders).

To generate a random sample of students within the participating schools, we first compiled a list of unique required English and History classes within each school. Then the classes were stratified by grade and randomly sampled. Every student within the selected classrooms was invited to participate. Selection of classrooms within schools continued until the total number of students to be surveyed ranged from 100-125 per school, with an equal distribution of grade levels represented. In the two schools with 100 or fewer enrolled students, all students in the school were invited to participate.

Data Collection and Response

Data collection took place between January and April of 2008. The self-report survey was completed by students during class; trained staff distributed the surveys and responded to students' questions. Students had the entire class period – approximately 50 minutes – to complete the surveys. Prior to distributing the surveys, passive consent was obtained from students' parents and staff read a statement on assent to the students. Study protocols were approved by the Harvard School of Public Health's Office on Human Research Administration.

There were 2,725 students enrolled in the classrooms selected for participation; 1,878 completed the survey (68.9%). Most who did not complete a survey were absent from school on the day of administration (85.5%, n=847). The remaining students declined to participate (n=99), or did not have parental consent (n=24). The sample for the present study is restricted to the 1,633 students who had siblings and who completed the items on fighting with peers and with siblings.

Measures

The BYS had separate sections inquiring about interpersonal violence with peers and siblings. Each section started with: "*For the following questions, think about...*", and ended with "...the kids in your immediate family, meaning the kids who live in your home" for items on siblings; or with "...other kids, including those in your schools or neighborhood" for peers. The items on fighting with siblings and peers read: "In the past 30 days, how many times have you gotten into a physical fight with someone?"; response options were: never , 1-2 times, and 3 or more times. These items were adapted from the National Youth

Risk Behavioral Surveillance System (YRBSS) (National Center for Chronic Disease Prevention and Health Promotion [NCCDPHP], 2010).

The BYS also included questions on demographic characteristics, including sex, Hispanic ethnicity, age (<14, 15, 16, 17, >18), and race. Students were asked to select one or more race options (i.e., White; American Indian/Alaska Native; Asian; Black/African American; Native Hawaiian/Other Pacific Islander; or other). Very few students self-identified as either American Indian/Alaska Native or Native Hawaiian/Pacific Islander. More than one-fourth selected "other" or skipped the item on race, and 90% of those were Hispanic/Latino. Therefore, to best represent the sample, we created a hybrid race/ethnicity variable with the following five levels: (1) Hispanic/Latino, any race; (2) Non-Hispanic, Black/African American; (3) Non-Hispanic, White; (4) Asian; and (5) Other, which includes those who were bi- or multi-racial, Native Hawaiian or other Pacific Islander, and American Indian or Alaska Native.

We included three covariates that are established risk factors for youth violence: school failure, substance use, and caregiver aggression (Herrenkohl et al., 2000; OSG, 2001). Those who reported having earned mostly Ds or Fs at their last report card were coded as having school failure, as compared to those who earned mostly As, Bs, or Cs. Youth who reported any past 30-day use of marijuana, alcohol, or tobacco were coded as having used substances, as compared to those who reported no past 30-day substance use. Items to assess school performance and substance use were adapted from the YRBSS (NCCHPDP, 2010). Respondents were coded as having experienced caregiver aggression if they indicated that a parent had done any of the following to them in the past 12 months: pushed, grabbed, or shoved them; kicked, bit, or punched them; hit them with an object that could hurt them; choked or burned them; attacked or threatened them with a weapon (e.g., bat, bottle, chain, or knife); or physically attacked them in another way. Items assessing caregiver aggression were adapted from the Parent-to-Child Conflict Tactics Scales (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998).

Data Analysis

First, we conducted descriptive analyses to characterize the sample. Then, we examined the prevalence of fighting with siblings and with peers overall, and by sex, race, and age. We used Chi-square goodness of fit tests to assess the statistical significance of differences in fighting by group. We used a multiple comparisons test to assess differences in fighting by group when there were more than 2 categories (Elliott & Reisch, 2006). We also estimated the co-occurrence of fighting with both siblings and peers. Next, we used Chi-square goodness of fit tests to assess the magnitude of the association between peer fighting and sibling fighting, and also between peer fighting and the three established risk factors for youth violence: school failure, any substance use, and caregiver aggression. For these analyses, fighting was classified as any vs. no past-month fighting. Data analysis was conducted using SAS software, version 9.1.3. (SAS Institute Inc., 2004).

To estimate the statistical association between sibling fighting and peer fighting, we ran a series of multivariate regression models and estimated prevalence ratios and 95% confidence intervals (Spiegelman & Hertzmark, 2005). Model 1 was adjusted for race/ethnicity and sex.

Subsequent models were adjusted for race/ethnicity and sex, and also for school failure (model 2), substance use (model 3), and caregiver aggression (model 4). Model 5 was adjusted for race/ethnicity, sex, and all three covariates (school failure, substance use, and caregiver aggression). The purpose of including the covariates was to examine how the association between sibling fighting and peer fighting compares to the association between the three established risk factors and peer fighting. To account for the fact that students were clustered within schools, we fit all models with generalized estimating equations (GEE) using PROC GENMOD. School was specified as the subject in the REPEATED statement (SAS Institute Inc., 2004).

RESULTS

There were 1,633 students in the analytic sample. Approximately one-half were girls, and greater than 75% were Black or Hispanic/Latino. Thirty-percent of the students (n=490) reported having fought with either peers or siblings. Among students who reported having fought with peers, 76.1% of said they had done so 1-2 times in the past month. Similarly, 71.9% of those who reported sibling fighting said they had fought 1-2 times in the past month. The cooccurrence of fighting with both siblings and peers was substantial. Among students who fought with siblings and/or peers, 28% fought with siblings only, 46% fought with peers only, and 26% fought with both siblings and peers; these percentages varied by sex. Considering only those who reported any past 30-day fighting, 19.2% of boys and 34.5% of girls reported past 30-day fighting with both siblings and peers (**Figure**).

A larger percentage of students reported past 30-day fighting with peers than with siblings (21.6% vs. 16.4%, $p<0.05$) (**Table 1**). Compared to girls, boys were significantly less likely to report sibling fighting (13.7% vs. 18.7%, $p<0.05$), but were more likely to report peer fighting (25.5% vs. 18.1%, $p<0.05$). The only statistically significant difference in fighting by race was that Asians were less likely than all other groups to report peer fighting. There were no statistically significant differences in the prevalence of fighting by age.

As expected based on the previous literature, substance use, school failure, and caregiver aggression were significantly associated with fighting with both siblings and peers (Table 2). However, chi-square tests indicated that the magnitude of the association between fighting with peers and with siblings was stronger than the association between peer fighting and the three risk factors for youth violence, i.e., substance use, school failure, and caregiver aggression. In the total sample, 16.4% reported fighting with siblings. Among those who fought with peers, 36.7% reported fighting with siblings.

The regression models show that sibling fighting was significantly associated with peer fighting, even after controlling for established risk factors for peer violence (**Table 3**). Although the measure of effect decreased after adjusting for school failure, substance use, and caregiver aggression independently, the association between sibling and peer fighting remained strong and statistically significant. The final model – which was adjusted for school clustering, race, sex, school failure, substance use, and caregiver aggression – showed that youth who fought with siblings were 2.5 times more likely to report having fought with peers.

DISCUSSION

In response to the fact that fighting with siblings has been virtually ignored as a potential risk factor for peer violence, we used data from a survey of Boston high school students to assess the association between fighting with siblings and with peers. Our findings show that fighting with siblings is strongly and significantly associated with peer fighting. After controlling for demographic characteristics and for three well-established risk factors for youth violence (i.e., school failure, substance use, and caregiver aggression), youth who reported sibling fighting were 2.5 times more likely to report peer fighting than youth who did not. While this finding is consistent with previous studies that demonstrate a link between aggression with siblings and with peers (Duncan, 1999; Williams et al., 2007; Wolke & Samara, 2004), this is the first study to identify an association between sibling violence and peer violence among high school-aged youth.

Sixteen percent of respondents in our sample reported that they had been in a physical fight with a sibling in the past 30 days. Although our results are lower than other published estimates of sibling violence, the discrepancy may be due to the fact that previous studies have used longer time frames for behavior (i.e., past year fighting vs. past 30-day fighting). Additionally, other studies have also focused on younger populations (Duncan, 1999; Ensor et al., 2010; Wolke & Samara, 2004), who tend to fight with siblings more frequently (Finkelhor et al., 2006). A third possible explanation relates to the fact that we used a single item to assess sibling violence, versus a more comprehensive, multi-item measure.

Thirty-two percent of the boys and 29% of the girls in our sample reported past 30-day fighting with peers and/or siblings. The most comparable estimates to these percentages come from the 2009 Boston Youth Risk Behavioral Surveillance System (YRBS), which showed that 44% of boys and 29% of girls reported physical fighting within the past 12-months (NCCDPHP, 2010). The difference in estimates could be due to the fact that we specified who respondents fought with (i.e., peers or siblings), whereas YRBS questionnaire ask about fighting without referencing a relationship. Alternatively, our prevalence estimate may be lower than the Boston YRBS estimate because we used a past 30-day time frame, whereas national and local YRBS questionnaires use a past year time frame for fighting. Our decision to use a past 30-day time frame was based on the rationale that physical fighting is a frequent occurrence – nearly one-third of youth report having been in a fight in the past year (Eaton et al., 2012). It was also based on the fact that longitudinal research shows that youth may change the frequency with which they engage in fighting and antisocial behaviors in intervals of six or fewer months (Kelley et al., 1997). Our work suggests that past 30-day is a suitable time frame for capturing fighting among adolescents. However, given that this is a low-income, predominantly minority, urban sample, additional research with different populations is warranted.

Our results suggest that physical fighting with siblings is not uncommon among high school students, and that 37% of those who fought with siblings also fought with their peers. As fighting in multiple contexts is a risk factor for life course persistent offending (Kelley et al., 1997), these youth may need indicated services.

We found that boys were more likely to report fighting with their peers versus with their siblings, whereas girls were equally as likely to fight with peers as they were with siblings. One possible explanation for the fact that boys are less likely to report sibling fighting is that they may be less likely to hit their female siblings, whereas girls may fight with both male and female siblings. Specifically, social norms condemn male violence against females, even within mixed-gender sibling relationships. Parents are less tolerant of boys hitting girls than the reverse (Aguilar et al., 2001; Reese-Weber, 2008; Straus, Gelles, & Steinmetz, 2006). Because information on gender of siblings was not collected, we were unable to examine this topic more fully and it deserves attention in future work. Simply put, understanding gender differences in the contextual nature of the violence is important when considering prevention and intervention strategies. Therefore, future research should also address whether gender might interact with other factors, in addition to sibling fighting, to influence peer fighting.

Limitations

Several limitations should be considered when interpreting our results. First, the sample was comprised of predominately low-income, youth of color attending public schools in Boston, Massachusetts. Youth in low-income, urban neighborhoods are more likely to be exposed to neighborhood violence and social disorder, and this may impact their own use of violence (McGee et al., 2001; Schwab-Stone et al., 1999). Additionally, national data show that Black and Hispanic youth are significantly more likely to report past-year fighting (National Center for Injury Prevention and Control, 2012). For these reasons, our findings have limited external validity, and replication with other populations is warranted.

Second, we did not know the age of respondents' siblings, and the age composition of sibling pairs impacts the level of physical aggression (Aguilar et al., 2001). Specifically, non-playful physical aggression with siblings when the age gap is greater than 7 years is unusual. Had information on sibling age been available, we would have restricted the analysis to those with siblings close to their age, as other sibling violence researchers have done (Aguilar et al., 2001).Were that the case, the reported prevalence of sibling violence might have been even higher because youth who reported no sibling fighting only because their siblings were very young would not have been included in the denominator.

Finally, it is worth noting that we modeled sibling fighting as a "predictor" of peer fighting. However, because our data are cross-sectional, we cannot draw conclusions about the temporality of fighting with siblings and with peers. Despite theoretical and empirical research suggesting that sibling fighting can lead to peer fighting, it is possible that fighting with peers influences sibling fighting, rather than the other way around. Moreover, when exploring the link between sibling fighting and peer fighting, it is important to consider the strong possibility that common factors that contribute to both. Parenting style, parental handling of sibling conflict, interparental violence, family stress, and children's behavioral and emotional disorders impact aggressive behavior, and may lead to both sibling fighting and peer fighting (Williams et al., 2007). Longitudinal research that accounts for a more comprehensive set of risk factors for aggression is needed to conclusively establish that sibling fighting precedes peer fighting.

Conclusions

We conducted this study because sibling violence has been overlooked as a potential risk factor for peer aggression, particularly among mid-late adolescents. Whereas psychologists have long referred to sibling violence as a "training ground" for anti-social behavior, the violence prevention field has turned a blind eye. We hope that our findings prompt violence researchers to take a closer look at sibling violence and how it relates to the development of aggressive behavior with non-family peers. This will require that we routinely incorporate questions about sibling violence in large-scale violence studies and behavioral surveillance systems, such as the National YRBSS. To the extent that we can confirm that sibling violence is linked to aggressive behavior, we should identify strategies to incorporate it into violence prevention programming, and also work with parents on how to address fighting in the home setting.

Finally, sibling violence is an important issue above and beyond its association with peer violence. Although it is frequently dismissed as harmless, sibling violence has the potential to be physically and psychologically damaging (Eriksen & Jensen, 2009; Finkelhor et al., 2006; Tucker et al., 2013). We should attend to the harms that youth face from siblings, as well as from peers. This may involve providing parents with advice and guidance about how to best manage sibling conflict (Tucker et al., 2013). Such programs could have the indirect effect of preventing peer violence in schools and communities.

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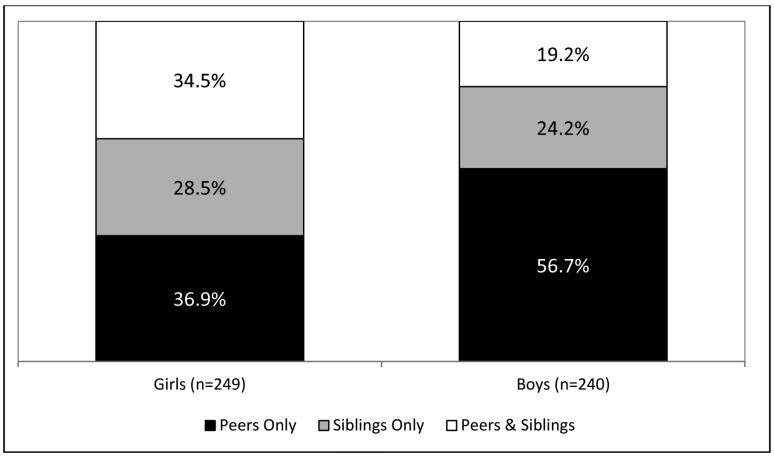

Figure.

Percentage of youth who reported fights with peers and siblings, among those who reported any fighting, by sex.

Table 1

Past 30-day fighting, by demographic characteristics (n=1,633)

	Fought with Siblings			Fought with Peers		
	%	*n*	X^2, df (*p*)	%	*n*	X^2, df (*p*)
Total (*n*)*	16.4	(267)		21.6	(352)	
Sex			7.56, 1 (0.006)			13.43, 1 (0.0002)
Boys (760)	13.7	(104)		25.5	(194)	
Girls (870)	18.7	(163)		18.1	(157)	
Race/Ethnicity			9.20, 4 (0.0562)			17.58, 4 (0.0015)
White (137)	16.1	(022)		21.9	(030)	
Black (687)	18.5	(127)		20.8	(143)	
Hispanic/Latino (523)	16.3	(085)		25.4	(133)	
Asian (127)	7.9	(010)		8.7	(011)	
Other (110)	14.6	(016)		23.6	(026)	
Age			7.31, 4 (0.1201)			0.90, 4 (0.9252)
<=14 years (131)	22.1	(29)		22.9	(030)	
15 years (312)	18.9	(59)		20.5	(064)	
16 years (453)	16.3	(74)		22.7	(103)	
17 years (417)	14.9	(62)		21.3	(089)	
>=18 years (306)	13.4	(41)		20.6	(063)	

*Totals may not sum to 1,633 due to missing responses.

Table 2

Past 30-day fighting, by selected risk factors, (n=1,633)

	Total Sample		Fought with Siblings			Fought with Peers		
	%	(*n*)	%	(*n*)	X^2, df	%	(*n*)	X^2, df
Any substance use	43.6	(683)	64.3	(162)	52.33, 1[b]	64.1	(212)	71.46, 1[b]
Alcohol use	37.7	(592)	56.9	(144)	47.63, 1[b]	56.5	(188)	63.59, 1[b]
Tobacco use	12.4	(194)	26.1	(065)	51.16, 1[b]	22.6	(074)	39.41, 1[b]
Marijuana use	19.6	(306)	32.1	(080)	29.63, 1[b]	34.6	(114)	59.52, 1[b]
School failure	14.9	(238)	21.4	(055)	10.03, 1[a]	23.9	(083)	28.08, 1[b]
Caregiver aggression	18.0	(291)	34.3	(091)	57.76, 1[b]	25.4	(089)	16.94, 1[b]
Fought with siblings	16.4	(267)	---	---	---	36.7	(129)	135.17, 1[b]

Note.

[a] <0.01.

[b] <0.0001.

Table 3

Prevalence Ratios and 95% Confidence Intervals for Past 30-Day Peer Fighting

	Model 1	Model 2	Model 3	Model 4	Model 5
Fought with siblings	2.96 (2.47, 3.55)	2.82 (2.37, 3.35)	2.42 (1.94, 3.02)	2.85 (2.37, 3.43)	2.49 (2.03, 3.06)
School failure		1.45 (1.25, 1.69)			1.33 (1.16, 1.54)
Any substance use			1.81 (1.47, 2.23)		1.79 (1.48, 2.16)
Caregiver aggression				1.22 (0.96, 1.55)	1.18 (0.94, 1.49)

Note. All models are adjusted for school, sex, and race/ethnicity.

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